

SEQUENCE LISTING

5 (1) GENERAL INFORMATION:

(i) APPLICANT: Innis, Michael
Creasey, Abla

10 (ii) TITLE OF INVENTION: Chimeric Proteins

(iii) NUMBER OF SEQUENCES: 37

15 (iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: Chiron Corporation
(B) STREET: 4560 Horton St.
(C) CITY: Emeryville
(D) STATE: CA
(E) COUNTRY: USA
20 (F) ZIP: 94608

25 (v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30B

30 (vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: US
(B) FILING DATE: 05-AUG-1994
(C) CLASSIFICATION:

35 (viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Savereide, Paul B.
(B) REGISTRATION NUMBER: 36,914
(C) REFERENCE/DOCKET NUMBER: 0990.001

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: 510-601-2585

(B) TELEFAX: 510-655-3542

(2) INFORMATION FOR SEQ ID NO:1:

5

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 51 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

10

(ii) MOLECULE TYPE: peptide

15

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Cys Ala Phe Lys Ala Asp Asp Gly Pro Cys Lys Ala Ile Met Lys Arg
1 5 10 15

20

Phe Phe Phe Asn Ile Phe Thr Arg Gln Cys Glu Glu Phe Ile Tyr Gly
20 25 30

25

Gly Cys Glu Gly Asn Gln Asn Arg Phe Glu Ser Leu Glu Glu Cys Lys
35 40 45

Lys Met Cys

50

30

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 51 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

35

(ii) MOLECULE TYPE: peptide

40

5 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

1 Cys Leu Leu Pro Leu Asp Tyr Gly Pro Cys Arg Ala Leu Leu Leu Arg
5 10 15
10 Tyr Tyr Tyr Asp Arg Tyr Thr Gln Ser Cys Arg Gln Phe Leu Tyr Gly
20 25 30
15 Gly Cys Glu Gly Asn Ala Asn Asn Phe Tyr Thr Trp Glu Ala Cys Asp
35 40 45
15 Asp Ala Cys
50

20 (2) INFORMATION FOR SEQ ID NO:3:

25 (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 51 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

30 (ii) MOLECULE TYPE: peptide

35 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

1 Cys Phe Leu Glu Glu Asp Pro Gly Ile Cys Arg Gly Tyr Ile Thr Arg
5 10 15
35 Tyr Phe Tyr Asn Asn Gln Thr Lys Gln Cys Glu Arg Phe Lys Tyr Gly
20 25 30
40 Gly Cys Leu Gly Asn Met Asn Asn Phe Glu Thr Leu Glu Glu Cys Lys
35 40 45

Asn Ile Cys

50

(2) INFORMATION FOR SEQ ID NO:4:

5 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 54 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- 10 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

15 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

20 Cys Arg Leu Gln Val Ser Val Asp Asp Gln Cys Glu Gly Ser Thr Glu
1 5 10 15

25 Lys Tyr Phe Phe Asn Leu Ser Ser Met Thr Cys Glu Lys Phe Phe Ser
20 25 30

30 Gly Gly Cys His Arg Asn Arg Ile Glu Asn Arg Phe Pro Asp Glu Ala
35 40 45

35 Thr Cys Met Gly Phe Cys
50

30 (2) INFORMATION FOR SEQ ID NO:5:

35 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 51 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

40 (ii) MOLECULE TYPE: peptide

5 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

10 5 Cys Leu Thr Pro Ala Asp Arg Gly Leu Cys Arg Ala Asn Glu Asn Arg
15 10 15

20 25 30 Phe Tyr Tyr Asn Ser Val Ile Gly Lys Cys Arg Pro Phe Lys Tyr Ser

35 40 45 10 Gly Cys Gly Gly Asn Glu Asn Asn Phe Thr Ser Lys Gln Glu Cys Leu

15 50 Arg Ala Cys

20 (2) INFORMATION FOR SEQ ID NO:6:

25 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 51 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

30 (ii) MOLECULE TYPE: peptide

35 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

10 15 Cys Tyr Ser Pro Lys Asp Glu Gly Leu Cys Ser Ala Asn Val Thr Arg

20 25 30 35 Tyr Tyr Phe Asn Pro Arg Tyr Arg Thr Cys Asp Ala Phe Thr Tyr Thr

35 40 45 40 Gly Cys Gly Gly Asn Asp Asn Asn Phe Val Ser Arg Glu Asp Cys Lys

Arg Ala Cys

50

(2) INFORMATION FOR SEQ ID NO:7:

5

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 37 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

10

(ii) MOLECULE TYPE: peptide

15

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Lys Lys Gly Phe Ile Gln Arg Ile Ser Lys Gly Gly Leu Ile Lys Thr
1 5 10 15

20

Lys Arg Lys Arg Lys Lys Gln Arg Val Lys Ile Ala Tyr Glu Glu Ile
20 25 30

25

Phe Val Lys Asn Met

35

(2) INFORMATION FOR SEQ ID NO:8:

30

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

35

(ii) MOLECULE TYPE: peptide

40

5 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Ala Lys Ala Leu Lys Lys Lys Lys Lys Met Pro Lys Leu Arg Phe Ala
1 5 10 15
5 Ser Arg Ile Arg Lys Ile Arg Lys Lys Gln Phe
20 25

10 (2) INFORMATION FOR SEQ ID NO:9:

15 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 276 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

20 (ii) MOLECULE TYPE: peptide

25 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Asp Ser Glu Glu Asp Glu Glu His Thr Ile Ile Thr Asp Thr Glu Leu
1 5 10 15
20 Pro Pro Leu Lys Leu Met His Ser Phe Cys Ala Phe Lys Ala Asp Asp
25 30
30 Gly Pro Cys Arg Ala Ile Met Lys Arg Phe Phe Phe Asn Ile Phe Thr
35 40 45
35 Arg Gln Cys Glu Glu Phe Ile Tyr Gly Gly Cys Glu Gly Asn Gln Asn
50 55 60
40 Arg Phe Glu Ser Leu Glu Glu Cys Lys Lys Met Cys Thr Arg Asp Asn
65 70 75 80
45 Ala Asn Arg Ile Ile Lys Thr Thr Leu Gln Gln Glu Lys Pro Asp Phe
85 90 95

Cys Phe Leu Glu Glu Asp Pro Gly Ile Cys Arg Gly Tyr Ile Thr Arg
 100 105 110

5 Tyr Phe Tyr Asn Asn Gln Thr Lys Gln Cys Glu Arg Phe Lys Tyr Gly
 115 120 125

Gly Cys Leu Gly Asn Met Asn Asn Phe Glu Thr Leu Glu Glu Cys Lys
 130 135 140

10 Asn Ile Cys Glu Asp Gly Pro Asn Gly Phe Gln Val Asp Asn Tyr Gly
 145 150 155 160

Thr Gln Leu Asn Ala Val Asn Asn Ser Leu Thr Pro Gln Ser Thr Lys
 165 170 175

15 Val Pro Ser Leu Phe Glu Phe His Gly Pro Ser Trp Cys Leu Thr Pro
 180 185 190

Ala Asp Arg Gly Leu Cys Arg Ala Asn Glu Asn Arg Phe Tyr Tyr Asn
 195 200 205

Ser Val Ile Gly Lys Cys Arg Pro Phe Lys Tyr Ser Gly Cys Gly Gly
 210 215 220

20 Asn Glu Asn Asn Phe Thr Ser Lys Gln Glu Cys Leu Arg Ala Cys Lys
 225 230 235 240

Lys Gly Phe Ile Gln Arg Ile Ser Lys Gly Gly Leu Ile Lys Thr Lys
 245 250 255

30 Arg Lys Arg Lys Lys Gln Arg Val Lys Ile Ala Tyr Glu Glu Ile Phe
 260 265 270

Val Lys Asn Met
 35 275

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

40 (A) LENGTH: 23 amino acids

(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

5 (ii) MOLECULE TYPE: peptide

10 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Lys Thr Lys Arg Lys Arg Lys Gln Arg Val Lys Ile Ala Tyr Glu
1 5 10 15

15 Glu Ile Phe Val Lys Asn Met
20

(2) INFORMATION FOR SEQ ID NO:11:

20 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 23 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

25 (ii) MOLECULE TYPE: peptide

30 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Lys Lys Lys Lys Lys Met Pro Lys Leu Arg Phe Ala Ser Arg Ile Arg
1 5 10 15

35 Lys Ile Arg Lys Lys Gln Phe
20

(2) INFORMATION FOR SEQ ID NO:12:

40

5 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 17 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

10 (ii) MOLECULE TYPE: peptide

15 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Ala Lys Leu Asn Cys Arg Leu Tyr Arg Lys Ala Asn Lys Ser Ser Lys
1 5 10 15

20 Leu

25 (2) INFORMATION FOR SEQ ID NO:13:

30 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 15 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

35 (ii) MOLECULE TYPE: peptide

40 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Thr Ser Asp Gln Ile His Phe Phe Phe Ala Lys Leu Asn Cys Arg
1 5 10 15

45 (2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

5

- (A) LENGTH: 20 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

10 (ii) MOLECULE TYPE: peptide

15 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Ser Glu Lys Thr Leu Arg Lys Trp Leu Lys Met Phe Lys Lys Arg Glu
1 5 10 15
Leu Glu Glu Tyr
20

20 (2) INFORMATION FOR SEQ ID NO:15:

25 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 15 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

30 (ii) MOLECULE TYPE: peptide

35 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

His Arg His His Pro Arg Glu Met Lys Lys Arg Val Glu Asp Leu
1 5 10 15

40 (2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 18 amino acids

(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

5 (ii) MOLECULE TYPE: peptide

10 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Phe Arg Lys Leu Thr His Arg Leu Phe Arg Arg Asn Phe Gly Tyr Thr
1 5 10 15

15 Leu Arg

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 12 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

30

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Leu Tyr Lys Lys Ile Leu Lys Lys Leu Leu Glu Ala
1 5 10

35

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 26 amino acids
(B) TYPE: amino acid

5 (C) STRANDEDNESS: single

10 (D) TOPOLOGY: linear

15 (ii) MOLECULE TYPE: peptide

20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

25 Asn Gly Leu Lys Arg Asp Lys Leu Gly Cys Glu Tyr Cys Glu Cys Arg
1 5 10 15

30 Pro Lys Arg Lys Leu Ile Pro Arg Leu Ser
20 25

35 (2) INFORMATION FOR SEQ ID NO:19:

40 (i) SEQUENCE CHARACTERISTICS:

45 (A) LENGTH: 161 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

50 (ii) MOLECULE TYPE: peptide

55 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

60 Asp Ser Glu Glu Asp Glu Glu His Thr Ile Ile Thr Asp Thr Glu Leu
1 5 10 15

65 Pro Pro Leu Lys Leu Met His Ser Phe Cys Ala Phe Lys Ala Asp Asp
20 25 30

70 Gly Pro Cys Arg Ala Ile Met Lys Arg Phe Phe Phe Asn Ile Phe Thr
35 40 45

Arg Gln Cys Glu Glu Phe Ile Tyr Gly Gly Cys Glu Gly Asn Gln Asn
50 55 60

Arg Phe Glu Ser Leu Glu Glu Cys Lys Lys Met Cys Thr Arg Asp Asn
5 65 70 75 80

Ala Asn Arg Ile Ile Lys Thr Thr Leu Gln Gln Glu Lys Pro Asp Phe
85 90 95

10 Cys Phe Leu Glu Glu Asp Pro Gly Ile Cys Arg Gly Tyr Ile Thr Arg
100 105 110

Tyr Phe Tyr Asn Gln Gln Thr Lys Gln Cys Glu Arg Phe Lys Tyr Gly
115 120 125

15 Gly Cys Leu Gly Asn Met Asn Asn Phe Glu Thr Leu Glu Glu Cys Lys
130 135 140

20 Asn Ile Cys Glu Asp Gly Pro Asn Gly Phe Gln Val Asp Asn Tyr Gly
145 150 155 160

25 Thr

29 (2) INFORMATION FOR SEQ ID NO:20:

30 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: double
- (D) TOPOLOGY: linear

35 (ii) MOLECULE TYPE: other nucleic acid

- (A) DESCRIPTION: /desc = "Adapter"

40 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

CCGCGGGGC

9

5 (2) INFORMATION FOR SEQ ID NO:21:

10 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 37 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

15 (ii) MOLECULE TYPE: other nucleic acid
(A) DESCRIPTION: /desc = "primer"

20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

25 GCTCCGCGGT GGCGATTCTG AGGAGGAGAT GAAGAAC

37

30 (2) INFORMATION FOR SEQ ID NO:22:

35 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 38 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

40 (ii) MOLECULE TYPE: other nucleic acid
(A) DESCRIPTION: /desc = "primer"

35 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

45 TCTGTCGACT CACATATTTT TAACAAAAAT TTCTTCAT

38

40 (2) INFORMATION FOR SEQ ID NO:23:

5 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 13 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: double
(D) TOPOLOGY: linear

10 (ii) MOLECULE TYPE: other nucleic acid
(A) DESCRIPTION: /desc = "adapter"

15 TCTAGATAAA AGA 13
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

20 (2) INFORMATION FOR SEQ ID NO:24:

25 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 38 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

30 (ii) MOLECULE TYPE: other nucleic acid
(A) DESCRIPTION: /desc = "primer"

35 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

40 ATCTCTAGAT AAAAGAGATT CTGAGGAAGA TGAAGAAC 38
(2) INFORMATION FOR SEQ ID NO:25:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 32 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single

5 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid
(A) DESCRIPTION: /desc = "primer"

10

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

15 TCTGTCGACT CAGGTTCCAT AATTATCCAC CT

32

(2) INFORMATION FOR SEQ ID NO:26:

20

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 33 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

25

(ii) MOLECULE TYPE: other nucleic acid
(A) DESCRIPTION: /desc = "primer"

30

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

35 AGGTATTTTT ATAACAATCA GACAAAACAG TGT

33

30

(2) INFORMATION FOR SEQ ID NO:27:

35

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 33 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

40

(ii) MOLECULE TYPE: other nucleic acid
(A) DESCRIPTION: /desc = "primer"

5 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

GAAACGTTCA CACTGTTTG TCTGATTGTT ATA

33

10 (2) INFORMATION FOR SEQ ID NO:28:

15 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 34 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

20 (ii) MOLECULE TYPE: other nucleic acid

- (A) DESCRIPTION: /desc = "primer"

25 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

30 CCAGCTCAAT GCTGTGAATA ACTCCCTGAC TCCG

34

35 (2) INFORMATION FOR SEQ ID NO:29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: other nucleic acid

- (A) DESCRIPTION: /desc = "primer"

40 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

CTTGGTTGAT TGCGGAGTCA GGGAGTTATT CACAGC

36

(2) INFORMATION FOR SEQ ID NO:30:

5 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 33 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

10 (ii) MOLECULE TYPE: other nucleic acid
(A) DESCRIPTION: /desc = "primer"

15 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

20 GGGGGAAATG AAAACAATT TACTTCCAAA CAA

33

25 (2) INFORMATION FOR SEQ ID NO:31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 36 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

30 (ii) MOLECULE TYPE: other nucleic acid
(A) DESCRIPTION: /desc = "primer"

35 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

40 CCTCAGACAT TCTTGTGG AAGTAAAATT GTTTTC

36

(2) INFORMATION FOR SEQ ID NO:32:

5 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 24 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

10 (ii) MOLECULE TYPE: other nucleic acid
(A) DESCRIPTION: /desc = "primer"

15 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

20 CCGATGCATT CATTGGTGC ATTC

24

25 (2) INFORMATION FOR SEQ ID NO:33:

30 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 24 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

35 (ii) MOLECULE TYPE: other nucleic acid
(A) DESCRIPTION: /desc = "primer"

40 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

CCTCATGATT GCCCGACATG GGCC

24

45 (2) INFORMATION FOR SEQ ID NO:34:

50 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 29 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single

5 (D) TOPOLOGY: linear

10 (ii) MOLECULE TYPE: other nucleic acid

15 (A) DESCRIPTION: /desc = "primer"

20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

25 GGTCCGGCGGT GGTGATGCTG CTCAGGAGC

29

30 (2) INFORMATION FOR SEQ ID NO:35:

35 (i) SEQUENCE CHARACTERISTICS:

40 (A) LENGTH: 33 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

45 (ii) MOLECULE TYPE: other nucleic acid

50 (A) DESCRIPTION: /desc = "primer"

55 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

60 GCAATGTTGT TTTTTCTATC CTCCAGCAAG CAT

65 33

70 (2) INFORMATION FOR SEQ ID NO:36:

75 (i) SEQUENCE CHARACTERISTICS:

80 (A) LENGTH: 34 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

85 (ii) MOLECULE TYPE: other nucleic acid

90 (A) DESCRIPTION: /desc = "primer"

5 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

GGATAGAAAA AAACAAACATT GCAACAAGAA AAGC

34

10 (2) INFORMATION FOR SEQ ID NO:37:

15 (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 32 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

20 (ii) MOLECULE TYPE: other nucleic acid

- (A) DESCRIPTION: /desc = "primer"

25 (xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

GGTTCTTGCA TTCTTCCAGT GTCTCAAAAT TG

32